PRS20

A COST EFFICIENCY MODEL FOR COMPARING ON-DEMAND TREATMENT COSTS IN HEREDITARY ANGIOEDEMA

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OBJECTIVES: To present simple, objective, and customizable cost estimation formulas to compare per-attack treatment costs of four recently FDA-approved Hereditary Angioedema (HAE) products. **METHODS:** Products developed for small orphan disease populations such as hereditary angioedema (HAE) are predictably costly. Comparing treatment costs among new HAE therapies is complicated by differences in dosing recommendations and re-dosing probabilities. We propose a simple cost estimation formula that factors in the non-static variables of body weight and re-dosing likelihood per attack based on official prescribing recommendations and published clinical study data. Other administrative or indirect costs were not factored into the formulas. **RESULTS:** Formulas were developed that allow insertion of local acquisition costs for any of the HAE products, according to the quantity of vials or syringes required for initial dosing. A weighted percentage of the cost of the initial dose was added to determine the total cost, factoring in the anticipated need for re-dosing. For products having more than one published re-dosing frequency, the lowest reported frequency was used as a conservative approach. Specific cost estimation formulas address three theoretical patient weight categories: ≤40 kg (to reflect small adults or pediatric patients), a standard 75 kg adult, and obese patients weighing between 100-125 kg. **CONCLUSIONS:** While therapy choices in HAE should be primarily driven by clinical factors and patient preferences, cost of treatment can be an important consideration if multiple options are considered equally appropriate. The formulas presented provide a simple, objective means of quickly comparing direct product costs for treating an HAE attack using local pricing figures.

PRS21

COST AND RESOURCE UTILIZATION IN HOSPITAL-TREATED CAP PATIENTS

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OBJECTIVES: Community-acquired pneumonia (CAP) is a leading cause of hospitalization in the US and is associated with substantial healthcare costs. The most commonly administered regimen for hospitalized patients, guideline-indicated intravenous azithromycin 500mg/ceftriaxone 1g (azi/ceft), is not available in identical oral formulation, requiring patients to switch regimen and potentially class when sufficiently improved for oral treatment (oral switch). The incremental cost and resource utilization associated with this requirement has not been fully characterized. This study characterizes the incremental burden of a regimen lacking identical all-oral formulation. **METHODS:** Inpatient stay data from the Truven Health Marketscan® Hospital Drug Database were used in this analysis. CAP inpatients treated with azi/ceft were compared to those treated with intravenous levofloxacin 750mg (levo, a fluoroquinolone), the most commonly used regimen with an all-oral option. As previous studies have shown higher adverse event (AE) rates in fluoroquinolone patients, only patients (azi/ceft or levo) who remained on their treatment until oral switch were studied. Total charges, length of stay (LOS), and length of IV treatment (LOIV) were compared using multivariate regression models controlling for observed patient characteristics. **RESULTS:** In the sample (N=33,284), predicted average charges for azi/ceft patients were $3,535 greater than charges for levo patients, with increased LOS of 0.33 days and LOIV of 0.65 days (all p<0.0001). 28.3% of azi/ceft patients added an additional treatment class, versus 5.1% of levo patients. Characteristic comparisons showed that azi/ceft patients were older (66.4 vs. 64.7 years), but similar in health index (1.49 vs. 1.45) and AE rate (35.3% vs. 35.8%). **CONCLUSIONS:** Use of azi/ceft, the most common antibiotic regimen for hospitalized CAP patients but one that lacks an identical all-oral formulation, is associated with increased LOIV, LOS and cost. Efficacious alternatives with similar (or better) adverse event profiles and an all-oral formulation may yield cost and resource use savings.

PRS22

OUT-OF-POCKET EXPENSES FOR COPD PATIENTS IN A THIRD LEVEL HOSPITAL

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OBJECTIVES: Chronic Obstructive Pulmonary Disease (COPD) is a main worldwide cause of morbidity and mortality. COPD prevalence in 40 years or older people is 7.8% in Mexico City. However, there is no information about direct cost of COPD patients in Mexico. This study estimated direct costs of COPD from patient perspective in a third level hospital. **METHODS:** We conducted an interview at each visit by patients from august 2013 to July 2014 in a third level hospital. The diagnosis was carried out by a pulmonologist according to GOLD criteria. Information about direct and indirect costs was collected. Mean (SD) of annual total cost, medical consultation, clinical test, drugs, oxygen, transportation, gasoline and food were estimated for outpatients with at least one year of diagnosis and stratifying by severity. Costs were transformed in US Dollars of 2014. **RESULTS:** We interviewed 482 outpatients. Patients were classified as: mild (n=36), moderate (n=137), severe (n=76) and very severe (n=233). Mean (SD) of age and diagnostic time were 72.4 (9.1) and 5.8 (4.2) years, respectively; and 257 (53.2%) were men. Annual total costs for mild, moderate, severe and very severe were $915.3, $1214.3, $1382.6 and $1595.1, respectively. Drugs (74.0%), oxygen (19.5%) and transportation (1.8%) were the main categories of total costs. Less than 9% of patients can afford oxygen. **CONCLUSIONS:** According to total cost, severity is positively correlated with the amount of out-of-pocket expenses. Oxygen is accessible to few patients.

PRS23

A DESCRIPTIVE ANALYSIS OF PATIENT CHARACTERISTICS AND HEALTH CARE BURDEN ASSOCIATED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN THE U.S. MEDICARE POPULATION

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OBJECTIVES: To evaluate the patient characteristics and health care burden associated with chronic obstructive pulmonary disease (COPD) in the U.S. Medicare population. **METHODS:** COPD patients were identified (International Classification of Disease, 9th Revision, Clinical Modification [ICD-9-CM] codes: 491.xx, 492.xx and 496.xx) using U.S. national Medicare claims from 01JAN2007 to 31DEC2010. The first diagnosis date was designated as the index date. Patients were required to: a) be age ≥65 years on the index date; b) have continuous medical and pharmacy benefits for 12 months pre-index date (baseline period); c) have continuous enrollment for 12 months post-index date (follow-up period), unless there was earlier evidence of death; and d) have no COPD diagnosis pre-index date. The outcomes of interest included medication use, including a long-acting beta agonist (LABA) or LABA/inhaled corticosteroid (ICS) combination, mortality and health care resource utilization and costs. **RESULTS:** A total of 543,249 COPD patients were identified. Patients were, on average, age 78 years. Most patients were white (94%) and resided in the South U.S. region (41%). The average Charlson Comorbidity Index score was 3.23, and hypertension (67%), diabetes (28%), congestive heart failure (21%) and chronic pulmonary disease (20%) were the most frequently diagnosed comorbidities. A 13.82% mortality rate was observed during the first year of the follow-up period. Post-index LABA medications, including arformoterol (0.55%), formoterol (0.25%) and salmeterol (0.32%) were prescribed to 1.10% of the population. Identified LABA/ICS combinations included budesonide/formoterol (1.97%) and fluticasone/salmeterol (10.02%). High health care resource utilization was encountered for Medicare carrier (99.40%), pharmacy (90.27%), outpatient (76.52%) and inpatient visits (48.83%). The main cost drivers were inpatient ($10,645), Medicare carrier ($4,888), outpatient ($3,322) and skilled nursing facility ($2,695) costs, resulting in $25,397 in total health care costs. **CONCLUSIONS:** U.S. Medicare patients have a high COPD-related health care burden.

PRS24

OBSERVATIONAL STUDY OF THE OUTCOMES AND COSTS OF INITIATING INHALED LONG-ACTING BRONCHODILATORS VERSUS INHALED SHORT-ACTING BRONCHODILATORS THERAPIES IN NEWLY-DIAGNOSED COPD PATIENTS

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OBJECTIVES: The aim of this study was to examine the association between inhaled bronchodilators and the utilization of healthcare services in newly-diagnosed COPD patients using a nationalwide health insurance administrative databases. **METHODS:** The Taiwan National Health Insurance Research Databases were used. Participants ≥40-years-old who had not been diagnosed with COPD between 2006 and 2007 but were diagnosed and prescribed COPD medications in 2008 were recruited as newly diagnosed COPD patients. Patients were categorized into three groups depending on their medications use, an inhaled long-acting bronchodilator (ILA-B), an inhaled short-acting bronchodilator (ISA-B) and an oral respiratory medication (ORM) group. The risk of COPD emergency department visits, hospitalization and healthcare costs were compared among cohorts during 1 year of follow-up. **RESULTS:** A total of 13,181 newly-diagnosed COPD patients with a mean age of 65.2 years, among which 8,055 (60.7%) were men, were included in the study. ED visits and hospitalization were associated with ISA-B cohort, male gender, older age, copayment exemptions, tertiary healthcare institutions visits, non-pulmonary specialist physicians and higher comorbidities. Multivariate analysis showed that the ISA-B cohort was associated with more ED visits, recurrent ED visits, hospitalizations and rehospitalizations (adjusted ORs [95% confidence intervals] = 5.06 [3.46, 7.41], 3.98 [2.08, 7.58], 1.59 [1.18, 2.21], and 1.42 [1.19, 2.18], respectively) compared with the ILA-B cohort. The ILA-B cohort incurred significantly higher adjusted pharmacy costs per patient per year by $165 (95% CI: $97, $233; P<0.001) vs the ISA-B cohort, whereas adjusted medical costs per patient per year were significantly lower in the ILA-B cohort vs the ISA-B cohort ($348 vs $564; P<0.001). The total yearly adjusted costs per patient, as a result, did not differ significantly between this two cohorts. **CONCLUSIONS:** Initiation of Inhaled long-acting bronchodilator treatment was associated with better clinical and economic outcomes compared to inhaled short-acting bronchodilator in newly-diagnosed COPD patients in real-life clinical practice.

PRS25

COST-EFFECTIVENESS OF TIOTROPIUM VS GLYCOPYRRONIUM IN MODERATE TO VERY SEVERE COPD IN CANADA, SWEDEN AND THE UK

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OBJECTIVES: Tiotropium (tio) is a well-established bronchodilator, LAMA (long-acting anticholinergic), for the treatment of moderate to very severe COPD. Clinical evidence from the SPARK trial suggests that tio is superior to glycopyrronium (gly) in preventing severe exacerbations. This study assessed the cost-effectiveness of tio versus gly making use of this new clinical evidence. **METHODS:** A Markov cohort model was populated with efficacy data from the UPLIFT and SPARK trials and cost and epidemiological data relevant for each country. Treatment efficacy was modelled as improvements in lung function, quality of life and as a lowering of the risk of exacerbations. The two interventions were assumed to be equally efficacious in terms of overall lung function, FEV1 (GLOW2 and SPARK trials). The relative efficacy of preventing exacerbations differed based on data from SPARK. Outcomes were simulated over an approximate life time horizon of 35 years, starting from an age of 65 years. **RESULTS:** The base case analysis showed that patients treated with tio gained CAN: 0.23, SWE: 0.24, UK: 0.25, QALYs compared to gly at an incremental cost of -955 (C$), 3,224 (SEK), -164 (£). For CAN and UK the analysis found tio to be dominating gly, while the Swedish analysis showed a cost per QALY gained of SEK 13,621. The results were mainly driven by the relative risk of severe exacerbations found in SPARK (RR: 1.43 CI 1.05-1.97, P 0.025). **CONCLUSIONS:** The results from this study show that tio adds benefits and savings in terms of QALYs and costs compared to gly monotherapy in high-risk